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Patent No. 6,872,133  
Request for Cert. of Correction dated August 8, 2005  
Attorney Docket No. 1455-031353

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 6,872,133 Confirmation No. 1872 10626290  
Inventor : Seung Weon LEE et al.  
Issued : March 29, 2005  
Title : Wave Saw Blade  
Examiner : Dung Van Nguyen  
Customer No. : 28289

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT  
FOR PTO MISTAKE (37 C.F.R. 1.322(a))

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Certificate  
AUG 12 2005  
of Correction

ATTENTION: Decision and Certificate of Correction Branch  
Patent Issue Division

Sir:

In accordance with 35 U.S.C. §254, we attach hereto Form PTO/SB/44 and a copy of proof of PTO errors and request that a Certificate of Correction be issued in the above-identified patent. The following errors appear in the patent as printed:

Column 2, Line 67, "that a an" should read -- that an --  
(See Amendment of 10/04/2004, page 2, replacement paragraph, line 9.

Column 5, Lines 32 and 35, "portions of the radius" should read  
-- portion s of the radius --  
(See Preliminary Amendment of 07/24/2003, page 2, 3<sup>rd</sup> replacement paragraph,  
lines 3 and 5.

Column 7, Line 67, "was given in Table 1" should read -- is given in Table 1 --  
(See Preliminary Amendment of 07/24/2003, page 3, replacement paragraph, line 10.

Column 9, Line 14, "does not vibrated vibrate" should read -- does not vibrate --  
(See Amendment of 10/04/2004, page 3, replacement paragraph, line 2.

Respectfully submitted,

THE WEBB LAW FIRM

By

Kent E. Baldauf  
Registration No. 25,826  
Attorney for Registrants  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219-1845  
Telephone: (412) 471-8815  
Facsimile: (412) 471-4094

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,872,133 B2

DATED : March 29, 2005

INVENTOR(S) : Lee et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, Line 67, "that a an" should read -- that an --

Column 5, Lines 32 and 35, "portions of the radius" should read  
-- portion s of the radius --

Column 7, Line 67, "was given in Table 1" should read  
-- is given in Table 1 --

Column 9, Line 14, "does not vibrated vibrate" should read  
-- does not vibrate --

{W0206027.1}

MAILING ADDRESS OF SENDER:

The Webb Law Firm  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219-1845

PATENT NO. 6,872,133

No. of additional copies



This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Application No. Not Yet Assigned  
Paper Dated: July 24, 2003  
In Reply to USPTO Correspondence of N/A  
Attorney Docket No. 1455-031353

Customer No. 28289



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : Not Yet Assigned  
Applicants : Seung Weon LEE et al.  
Filed : Concurrently Herewith  
Title : WAVE SAW BLADE

MAIL STOP PATENT APPLICATION  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Sir:

Prior to initial examination, please amend the above-identified patent application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Abstract** begin on page 4 of this paper.

**Remarks** begin on page 5 of this paper.

**AMENDMENTS TO THE SPECIFICATION**

Please replace the paragraph beginning at page 6, line 15, with the following rewritten paragraph:

-- In order to solve the aforesaid problems, the prior art includes an improved saw blade which is capable of withstanding the forces transmitted when the workpiece is cut by the saw blade, is shown in Figs. 3 and 4. The saw blade of Fig. 3 has ribbed portions formed on the shank of the saw blade. The ribbed portions are radially formed from the vicinity of the center of the shank to the outer circumference of the shank in the shape of waves. --

Please replace the paragraph beginning at page 11, line 9, with the following rewritten paragraph:

-- Fig. 7 is a fragmented side view showing various dimensions of a sample for a tensile test. --

Please replace the paragraph beginning at page 13, line 5, with the following rewritten paragraph:

3 -- Wave-shaped portions 110 are formed on the shank 101 of the saw blade  
5 100 according to the present invention. The wave-shaped portions 110 are formed over a prescribed portion s of the radius of the shank 101, and are spaced a prescribed distance from each other and alternately arranged on the front and rear surfaces of the shank 101. The aforesaid prescribed portion s of the radius of the shank 101 is spaced at a distance from the center of the insertion hole 109. --

Please replace the paragraph beginning at page 14, line 13, with the following rewritten paragraph:

-- ~~The~~ As seen in Fig. 6, the height 1 of each of the front prominences 116 or the rear prominences of the wave-shaped portions 110 of the shank 101, as measured from a radially extending central axis, is preferably less than the height of the front or rear prominence of each of cutting tips 104, which is required to prevent any friction between the shank 101 and the work surface of the workpiece in the course of cutting the workpiece. --

Please replace the paragraph beginning at page 18, line 21, with the following rewritten paragraph:

-- The tensile test was carried out with a sample having dimensions as shown in Fig. 7. The specific dimensions (mm) of the sample are as follows: --

Please replace the paragraph beginning at page 19, line 6, with the following rewritten paragraph:

5 -- Furthermore, the cutting force induced shaking of the sample generated when the sample was actually cut was verified through the experiments. The process of impact vibration experiments was as follows: The impact vibration experiments were carried out using a table saw equipped with a Bosch angle grinder having specifications of 5000 RPM and 2200 W, which is widely used. The impact was instantaneously applied to a granite sample having a thickness of 20 mm using a saw blade whose outer diameter was 350 mm. At this time, the feed speed was 1.5 to 2.0 m/min. After the instantaneous impact was applied to the granite sample, the saw blade was separated from the granite sample to measure the vibration width of the saw blade using a transparent scale. The result of  
10 measurement of the vibration width (mm) of the saw blade ~~was~~ is given in Table 1. --

Appl. No. 10/626,290  
Amdt. dated October 4, 2004  
Reply to Office Action of 07/02/2004  
Attorney Docket No. 1455-031353



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/626,290 Confirmation No. 1872  
Applicant : Seung Weon LEE  
Filed : July 24, 2003  
Title : Wave Saw Blade  
Group Art Unit : 3723  
Examiner : Dung V. Nguyen  
Customer No. : 28289

MAIL STOP AMENDMENT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office Action of July 2, 2004, please amend the above-identified application as follows. A period of three months was set for responding to this Office Action. Since October 2, 2004, fell on a Saturday, this response is being timely filed on Monday, October 4, 2004.

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 5 of this paper.

**Remarks** begin on page 7 of this paper.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 4, 2004.

\_\_\_\_\_  
Diane Paull

(Name of Person Mailing Paper)

\_\_\_\_\_  
*Diane Paull*  
Signature

\_\_\_\_\_  
10/04/2004  
Date

**Amendments to the Specification:**

**Please replace the paragraph beginning at page 5, line 25, with the following rewritten paragraph:**

--When the saw blade 10 is continuously rotated at a high speed of several thousand RPM to cut the workpiece in a dry cutting fashion, the shank 11 of the saw blade 10 is heated to a temperature of several ~~hundreds~~ hundred degrees. When the shank 11 of the saw blade 10 is instantaneously heated as mentioned above, the strength of the shank is decreased even though the shank is made of alloy steel. Consequently, the shank 11 of the saw blade 10 vibrates from side to side. When the shank 11 of the saw blade 10 vibrates widely, the shank 11 may be broken or the cutting tips 14 attached to the outer circumference of the shank 11 may be broken off from the shank 11 of the saw blade 10 with the result that ~~a-accident~~ an accident may be caused, for example, an operator of the saw blade may be injured in the course of cutting the workpiece.--

**Please replace the paragraph beginning at page 8, line 6, with the following rewritten paragraph:**

--When the frictional load is caused as mentioned above, the cutting speed of the saw blade, which is the most important factor in a small tool, is decreased. Furthermore, the shank is worn and heated due to continuous friction between the shank and the workpiece, whereby the shank may be deformed due to the forces during the cutting work. The result is that ~~a-accident~~ an accident may ~~occur~~, occur.

**Please replace the paragraph beginning at page 9, line 5, with the following rewritten paragraph:**

--In accordance with the present invention, the above and other objects can be accomplished by the provision of a saw blade comprising: a disc-shaped shank having an insertion hole formed at the center thereof so that a rotating shaft of ~~an-powered~~ a powered tool is inserted through the insertion hole of the shank, and wave-shaped portions formed over a prescribed portion of the radius of the disc-shaped shank, the wave-shaped portions being spaced a prescribed distance from each other and alternately arranged on the front and rear surfaces of the disc-shaped shank, the prescribed portion of the radius of the disc-shaped shank being at a distance from the

center of the insertion hole; and a plurality of cutting tips attached to the outer circumference of the shank for cutting a workpiece, the cutting tips containing particles of high hardness.--

**Please replace the paragraph beginning at page 20, line 18, with the following rewritten paragraph:**

--Furthermore, the cutting tests for the conventional saw blade having a straight shank and the wave saw blade of the present invention were carried out. The specification of each of the tested saw blades ~~were~~ was as follows: The thickness of the cutting tip was 3.2 mm, and the length of the cutting tip was 40 mm. 100% cobalt was used as a bond, and a compound of 50% of a diamond product having a grain size of 40/50 and a concentration of 23, which was manufactured and sold under the trademark of ISD-1650 by ILJIN Diamond Co., Ltd. in Korea, and 50% of another diamond product having a grain size of 30/40 and a concentration of 23, which was the same grade as the ISD-1650 diamond product, was used as a super-abrasive material. The cutting tips were attached to the outer circumference of the shank by laser welding. A concrete sample having a compression strength of approximately 300 kgf/cm<sup>2</sup> was used as the workpiece. The saw blade was manually moved at a cross feed of 35 mm. The workpiece was cut by units of 30 cm in length, and the cutting processes were repeated 50 times so that the cut length of the workpiece amounted to 15 m. The results of the cutting tests showed that the cutting speed of the conventional saw blade was 733 cm<sup>2</sup>/min, and the cutting speed of the wave saw blade having the ring-shaped wave shank of the present invention was 896 cm<sup>2</sup>/min. As can be seen from the results of the cutting tests, the cutting speed of the wave saw blade of the present invention is 22% faster than that of the conventional saw blade.--

**Please replace the paragraph beginning at page 23, line 2, with the following rewritten paragraph:**

--The present invention also provides a saw blade whose mechanical strength is considerably increased. Consequently, the shank does not ~~vibrated~~ vibrate from side to side even though the shank is subject to a temperature of several hundred degrees caused by the friction between the shank rotating at high speed and the workpiece, and accumulation of fatigue on the saw blade is prevented.--